1929 to 1958 - From Aeronautical Engineering to Mechanics

Part I

The University of Minnesota first offered courses in aeronautical engineering to undergraduates in mechanical engineering in 1926. This was 13 years after the first aeronautical engineering program in the U.S. was established at MIT. In early 1928, Ora M. Leland, Dean of the College of Engineering and Architecture, proposed to the Minnesota Board of Regents that an independent department of aeronautical engineering be established. He believed that "Minnesota is favorably located to become a center for this field of engineering for the Northwest." [1]Leland recommended that the new curriculum continue much as it had from within the mechanical engineering department.

A special lectureship was given to John D. Akerman, who not only taught during the 1928-1929 school year, but also helped design the final form of the department. In the fall of 1929, the Department of Aeronautical Engineering at the University of Minnesota officially opened its doors to students. John Akerman, then an associate professor, served as its first department head, a position he would hold for nearly three decades.

Consistent with Akerman's background, the department's curriculum reflected the interests of industry. Born in Latvia, Akerman began his aeronautical studies at the Imperial Technical Institute in Moscow under the pioneer aerodynamicist Nickolai Joukowski. Akerman was also acquainted with Igor Sikorsky and maintained contact with Sikorsky after both immigrated to the USA. When World War I started, Akerman served as a pilot for the Russian Imperial Air Service. After the Bolshevik take over in 1917, he fled to France and served as a pilot in the French air force. He moved to the United States after the war in 1918.

Akerman's aeronautical interests led him to the University of Michigan, where he earned a bachelor's degree in aeronautical engineering in 1925. Akerman stayed at Michigan until 1927, doing coursework for a master's degree and working on a subsonic wind tunnel endowed by the new Guggenheim Fund for the Promotion of Aeronautics. He left Michigan for a position as chief design engineer at Hamilton Metal Plane Company in Milwaukee before finishing his master's degree. In 1928, Mohawk Aircraft Corporation, located in Minneapolis, hired Akerman as the chief engineer for their new low wing monoplane. It was this position that brought him to the Twin Cities and created the opportunity for Akerman to begin teaching at the university.

The Aeronautical Engineering department at Minnesota offered eighteen courses its first year. These courses dealt primarily with hardware, pilot knowledge, structures, instruments, electrical systems, navigation, and communications. Charles Boehnlein of the Department of Mathematics was the professor for the more theoretical courses that dealt with aerodynamics. His three course series introduced the concepts of aerodynamic forces, stability, propeller theory, and laboratory practices. Professor Joseph Wise from the civil engineering department taught two classes on structures as applied to airframes and landing gear. Instructor Gustav Hoglund took responsibility for the laboratory courses, which covered airplane design, airplane parts and their construction, and airships.

Course offerings expanded during the 1930s with the addition of new faculty and new interests in industry. In the mid-1930s Akerman began studying the effects of high altitudes on pilots. He believed the next advancement in aircraft technology would be stratospheric flight "where high speeds are possible and bad weather in not encountered." On October 23, 1934 Dr. Jean Piccard, a Swiss chemical engineer, and his balloon-piloting wife, Jeanette Piccard, ascended to 57,579 feet in a cloth balloon to record data on the stratosphere. The flight and the Piccards' possible contribution to his own project attracted Akerman's attention. Jean Piccard began experimenting with balloons in the early 1930s with his physicist brother, Auguste. With Dean Samuel Lind's approval, Akerman invited both Piccards to Minnesota, but only Jean became a faculty member-first as special lecturer, then as Professor in 1938. In addition to the stratospheric coursework, the faculty added courses on seaplanes in 1930 and dirigibles in 1931, both taught by Professor Wise.

Minnesota's Aeronautical Engineering department produced substantial numbers of talented engineers, thereby fulfilling industry's growing need for professional employees with formal aeronautical knowledge. In 1936, the program in Aeronautical Engineering became one of the first 10 programs accredited by the Engineering Council for Professional Development (the precursor of ABET). The Department has been in continuous accreditation since then. During the 1939-1940 school year, 3034 students were enrolled in aeronautical engineering programs across the United States and Canada, and 455 of those students studied at the University of Minnesota.

In 1926 Daniel Guggenheim organized the Daniel Guggenheim Fund for the Promotion of Aeronautics. Guggenheim intended the fund "to promote aeronautical education throughout the country, to assist in the extension of aeronautical science, and to further the development of commercial aircraft, particularly in its use as a regular means of transporting both goods and people." The fund endowed seven of the ten schools that offered aeronautical engineering degrees at that time. Minnesota was not one of these. Since Minnesota received no Guggenheim funding, a major impetus for moving towards engineering science was missing. Instead, the department remained practice-oriented with little focus on the theoretical side of aeronautical engineering. Those courses that were added in the 1930s mostly fell into the category of practice, not engineering science. In some cases, the faculty even dropped some science-based engineering courses.

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1. Ora M. Leland to President L. D. Coffman, 4 February, 1928, College of Engineering and Architecture, Department of Aeronautics, 1929-1940 File, President's Office Papers, 1911-1945. University of Minnesota Archives.

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